

**STATIONARY SOURCE PERMIT TO AMEND AND OPERATE**

**This permit includes designated equipment subject to  
New Source Performance Standards (NSPS).**

This permit supersedes the permits dated September 13, 2002, December 18, 2003,  
March 26, 2004, and January 13, 2005.

In compliance with the Federal Clean Air Act and the Commonwealth of Virginia  
Regulations for the Control and Abatement of Air Pollution,

NASA Goddard Space Flight Center  
Wallops Flight Facility  
Wallops Island, Virginia 23337-5099  
**Registration No.: 40217**  
AFS Id. No.: 51-001-00005

is authorized to amend and operate

an aerospace research and technology facility

located at

Wallops Flight Facility, Wallops Island, Virginia  
Accomack County

in accordance with the Conditions of this permit.

Approved on **April DRAFT, 2005.**

(for)

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Director, Department of Environmental Quality

Permit consists of 10 pages.  
Permit Conditions 1 to 33.

**PERMIT CONDITIONS** - the regulatory reference or authority for each condition is listed in parentheses ( ) after each condition.

## **APPLICATION**

1. Except as specified in this permit, the permitted facility is to be amended and operated as represented in the permit applications dated February 24, 1992, March 12, 1994, January 20, 1998, July 19, 2001, October 1, 2003, February 25, 2004, May 20, 2004, September 2, 2004, and February 10, 2005 including amendment information dated March 24, 1992, April 14, 1994, April 30, 1994, August 15, 2001, May 29, 2002, August 9, 2002, August 29, 2002, October 30, 2003, November 25, 2003, January 5, 2004, February 25, 2004, March 10, 2004, August 4, 2004, September 10, 2004, November 19, 2004, and December 13, 2004. Any changes in the permit application specifications or any existing facilities which alter the impact of the facility on air quality may require a permit. Failure to obtain such a permit prior to construction may result in enforcement action.  
(9 VAC 5-50-390 and 9 VAC 5-80-1210 D)

## **PROCESS REQUIREMENTS**

2. **Equipment List** - Equipment to be amended at this facility consists of:

- Soil Vapor Extraction Unit

Previously permitted equipment at this facility prior to the date of this permit consists of:

- Newco Nondestructive Inspection Booth
- one distillate oil-fired boiler rated at 1.7 million Btu/hr
- two distillate/residual oil-fired boilers, each rated at 29.3 million Btu/hr (NSPS) (emission units D008-01 and D008-03)
- one distillate/residual oil-fired boiler, rated at 20.9 million Btu/hr (emission unit D008-02)
- various distillate oil-fired boilers and heaters, each rated less than 3 million Btu/hr
- various generators and pumps
- various non-NSPS storage tanks
- parts washers
- painting/coating operations
- offset press
- work/maintenance shops
- laboratories
- welding equipment
- deacidification unit
- photo-mounting operation

(9 VAC 5-80-1100)

### **OPERATING/EMISSION LIMITATIONS**

3. **Fuel** - The approved fuels for the Building D-8 boilers (D008-01, D008-02, and D008-03) are off-specification fuel oil, distillate oil, and residual oil. A change in the fuels may require a permit to modify and operate.  
(9 VAC 5-80-1180)
4. **Fuel** - The approved fuel for the boilers (< 3 million Btu/hr), heaters, generators, and pumps is distillate oil. A change in the fuel may require a permit to modify and operate.  
(9 VAC 5-80-1180)
5. **Fuel Throughput** - The Building D-8 boilers (D008-01, D008-02, and D008-03), combined, shall consume no more than 1,500,000 gallons of distillate oil, residual oil, and off-specification fuel oil, combined, per year, calculated monthly as the sum of each consecutive 12-month period. Of the 1,500,000 gallons, no more than 3,000 gallons shall consist of off-specification fuel oil per year, calculated monthly as the sum of each consecutive 12-month period.  
(9 VAC 5-80-1180 and 9 VAC 5-50-260)
6. **Fuel Throughput** - The boilers and heaters, combined, with the exception of the Building D-8 boilers, shall consume no more than 1,000,000 gallons of distillate oil per year, calculated monthly as the sum of each consecutive 12-month period.  
(9 VAC 5-80-1180)
7. **Fuel Throughput** - The generators and pumps, combined, shall consume no more than 140,000 gallons of distillate oil per year, calculated monthly as the sum of each consecutive 12-month period.  
(9 VAC 5-80-1180)
8. **Fuel Specifications** - The off-specification fuel oil, distillate oil, and residual oil shall meet the specifications below:

OFF-SPECIFICATION FUEL OIL which meets specifications for JP5, JP10, and JPTS fuel  
Maximum sulfur content per shipment: 0.5%

DISTILLATE OIL which meets ASTM specifications for numbers 1 or 2 fuel oil  
Maximum sulfur content per shipment: 0.5%

RESIDUAL OIL which meets ASTM specifications for numbers 4, 5, or 6 fuel oil  
Maximum sulfur content per shipment: 0.5%

(9 VAC 5-80-1180)

9. **Fuel Certification** - The permittee shall obtain a certification from the fuel supplier with each shipment of oil. Each fuel supplier certification shall include the following:
- a. The name of the fuel supplier;
  - b. The date on which the off-specification fuel oil, distillate oil, or residual oil was received;
  - c. The volume of off-specification fuel oil, distillate oil, or residual oil delivered in the shipment;
  - d. A statement that the distillate oil complies with the American Society for Testing and Materials specifications for numbers 1 or 2 fuel oil, and/or 4, 5, or 6 fuel oil, as appropriate;
  - e. The sulfur content of the oil.
  - f. Documentation of sampling of the residual oil, indicating the location of the residual oil when the sample was drawn; and,
  - g. The method used to determine the sulfur content of the residual oil.
- (9 VAC 5-170-160 and 9 VAC 5-50-410)
10. **Operating and Training Procedures** - Boiler and generator emissions shall be controlled by proper operation and maintenance of combustion equipment. Operators shall be trained in the proper operation of all such equipment. Training shall consist of a review and familiarization of the manufacturer's operating instructions, at minimum. The permittee shall maintain records of the required training including a statement of time, place and nature of training provided. The permittee shall have available good written operating procedures and a maintenance schedule for the boilers and generators. These procedures shall be based on the manufacturer's recommendations, at minimum. All records required by this condition shall be kept on site and made available for inspection by the DEQ.
- (9 VAC 5-170-160)
11. **Equipment Installation or Replacement** - In the event that any boiler, heater, or generator is added, or any boiler, heater, or generator existing on the site at the date of issuance of this permit is replaced with another unit, the permittee shall notify the Tidewater Regional Office prior to such event occurring. The notification shall include the unit being added, whether or not the new unit is replacing another unit, the unit being replaced, and the size/rated capacity and fuel of each affected unit. A change in the equipment may require a permit to modify and operate.
- (9 VAC 5-80-1180)
12. **Emergency Generators** - The generators are to be used ONLY for providing power at the location during interruption of service from the normal power supplier, periodic maintenance, testing, and operational training. The 10.3 mmBtu/hr generator (D008-04) may be used for peak shaving purposes.
- (9 VAC 5-80-1180 and 9 VAC 5-170-160)

13. **Emission Limits** - Emissions from the operation of the Building D-8 boilers (D008-01, D008-02, and D008-03) shall not exceed the limits specified below:

|                                       | <u>D008-01 and D008-03, each</u> | <u>D008-02</u> | <u>Combined</u> |
|---------------------------------------|----------------------------------|----------------|-----------------|
| Particulate Matter                    | 1.5 lbs/hr                       | 1.1 lbs/hr     | 5.8 tons/yr     |
| PM-10                                 | 1.3 lbs/hr                       | 0.9 lbs/hr     | 5.0 tons/yr     |
| Sulfur Dioxide                        | 15.3 lbs/hr                      | 10.9 lbs/hr    | 58.9 tons/yr    |
| Nitrogen Oxides (as NO <sub>2</sub> ) | 10.7 lbs/hr                      | 7.7 lbs/hr     | 41.3 tons/yr    |
| Carbon Monoxide                       | 1.0 lbs/hr                       | 0.7 lbs/hr     | 3.8 tons/yr     |
| Volatile Organic Compounds            | 0.1 lbs/hr                       | 0.0 lbs/hr     | 0.2 tons/yr     |

These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits shall be considered credible evidence of the exceedance of emission limits. Compliance with the annual emission limits may be determined as stated in Condition numbers 3, 5, 8, 18, and 19.  
(9 VAC 5-50-260)

14. **Emission Limits** - Emissions from the operation of the boilers and heaters, combined, with the exception of the Building D-8 boilers, shall not exceed the limits specified below:

|                                       |              |
|---------------------------------------|--------------|
| Particulate Matter                    | 1.0 tons/yr  |
| PM-10                                 | 0.5 tons/yr  |
| Sulfur Dioxide                        | 35.5 tons/yr |
| Nitrogen Oxides (as NO <sub>2</sub> ) | 10.0 tons/yr |
| Carbon Monoxide                       | 2.5 tons/yr  |

These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits shall be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Condition numbers 4, 6, 8, and 20.  
(9 VAC 5-170-160)

15. **Emission Limits** - Emissions from the operation of the generators and pumps, combined, shall not exceed the limits specified below:

|                                       |              |
|---------------------------------------|--------------|
| Particulate Matter                    | 3.0 tons/yr  |
| PM-10                                 | 3.0 tons/yr  |
| Sulfur Dioxide                        | 2.8 tons/yr  |
| Nitrogen Oxides (as NO <sub>2</sub> ) | 43.2 tons/yr |
| Carbon Monoxide                       | 9.3 tons/yr  |
| Volatile Organic Compounds            | 3.4 tons/yr  |

These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits shall be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Condition numbers 4, 7, 8, and 20.

(9 VAC 5-170-160)

16. **Emission Limits** - Emissions from the operation of the two paint spray booths (Building N-159 and Building F-16), each, shall not exceed the limits specified below:

|                            |              |
|----------------------------|--------------|
| Volatile Organic Compounds | 10.0 tons/yr |
|----------------------------|--------------|

These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits shall be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Condition number 22.

(9 VAC 5-170-160)

17. **Emission Limits** - Emissions from the operation of the aerospace research and technology facility shall not exceed the limits specified below:

|                                       |              |
|---------------------------------------|--------------|
| Particulate Matter                    | 13.9 tons/yr |
| PM-10                                 | 12.5 tons/yr |
| Sulfur Dioxide                        | 97.2 tons/yr |
| Nitrogen Oxides (as NO <sub>2</sub> ) | 94.5 tons/yr |
| Carbon Monoxide                       | 15.6 tons/yr |
| Volatile Organic Compounds            | 95.2 tons/yr |

These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits shall be considered credible evidence of the exceedance of emission limits. Compliance with these emission limits may be determined as stated in Condition numbers 3, 4, 5, 6, 7, 8, 18, 19, 20, 21, and 22.

(9 VAC 5-170-160 and 9 VAC 5-50-260)

18. **Visible Emission Limit** - Visible emissions from each 29.3 million Btu/hr boiler (D008-01 and D008-03) when burning distillate oil shall not exceed 10 percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 20 percent opacity as determined by EPA Method 9 (reference 40 CFR 60, Appendix A). This condition applies at all times except during startup, shutdown, and malfunction.

(9 VAC 5-50-80, 9 VAC 5-50-260, and 9 VAC 5-50-410)

19. **Visible Emission Limit** - Visible emissions from each 29.3 million Btu/hr boiler (D008-01 and D008-03) when burning residual oil shall not exceed 20 percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 27 percent opacity as determined by EPA Method 9 (reference 40 CFR 60, Appendix A). This condition applies at all times except during startup, shutdown, and malfunction.  
(9 VAC 5-50-80, 9 VAC 5-50-260, and 9 VAC 5-50-410)
20. **Visible Emission Limit** - Visible emissions from all the other emission units, with the exception of boilers D008-01 and D008-03, shall not exceed 20 percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed 30 percent opacity as determined by EPA Method 9 (reference 40 CFR 60, Appendix A). This condition applies at all times except during startup, shutdown, and malfunction.  
(9 VAC 5-50-80)
21. **Requirements by Reference** - Except where this permit is more restrictive than the applicable requirement, the NSPS equipment as described in Condition 2 shall be operated in compliance with the requirements of 40 CFR 60, Subpart Dc.  
(9 VAC 5-50-400 and 9 VAC 5-50-410)

## **RECORDS AND REPORTING**

22. **On Site Records** - The permittee shall maintain records of emission data and operating parameters as necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the Tidewater Regional Office. These records shall include, but are not limited to:
  - a. Daily, monthly, and annual throughput of distillate oil and residual oil for the Building D-8 boilers (D008-01, D008-02, and D008-03), combined. Annual throughput shall be calculated monthly as the sum of each consecutive 12-month period.
  - b. Annual throughput of off-specification fuel oil, calculated monthly as the sum of each consecutive 12-month period.
  - c. Annual throughput of distillate oil for the boilers and heaters, combined, with the exception of the Building D-8 boilers (D008-01, D008-02, and D008-03), calculated monthly as the sum of each consecutive 12-month period.
  - d. Annual throughput of distillate oil for the generators and pumps, combined, calculated monthly as the sum of each consecutive 12-month period.
  - e. Records for each paint booth sufficient to demonstrate compliance with the VOC emission limit in Condition 16.
  - f. Records for the SVE system using photoionization detector (PID) monitoring samples, conducted each work day for the first 3 months and at least monthly thereafter, to demonstrate compliance with the facility wide VOC emission limit in Condition 17.
  - g. All fuel supplier certifications.

These records shall be available for inspection by the DEQ and shall be current for the most recent five years.  
(9 VAC 5-50-50)

23. **Semi-Annual Reports** - The permittee shall submit fuel quality reports to the Tidewater Regional Office within 30 days after the end of each semi-annual period. If no shipments of oil were received during the semi-annual period, the semi-annual report shall consist of the dates included in the semi-annual period and a statement that no oil was received during the semi-annual period. If distillate oil and/or residual oil was received during the semi-annual period, the reports shall include:
- a. The dates included in the semi-annual period,
  - b. A copy of all fuel supplier certifications for all shipments of distillate oil and/or residual oil received during the semi-annual period, or a semi-annual summary from each fuel supplier that includes the information specified in Condition 9 for each shipment of distillate oil and/or residual oil, and
  - c. A signed statement from the principal or chief executive officer of the facility that the fuel supplier certifications or summaries of fuel supplier certifications represent all of the distillate oil burned or received at the facility.
- (9 VAC 5-170-160, 9 VAC 5-50-50, and 9 VAC 5-20-230)

24. **Testing/Monitoring Ports** - The permitted facility shall be constructed so as to allow for emissions testing upon reasonable notice at any time, using appropriate methods. Test ports shall be provided when requested at the appropriate locations.  
(9 VAC 5-50-30 F)

### **GENERAL CONDITIONS**

25. **Permit Invalidation** - This permit to amend the facility shall become invalid, unless an extension is granted by the DEQ, if:
- a. A program of continuous construction/installation is not commenced before the latest of the following:
    - i. 18 months from the date of this permit;
    - ii. Nine months from the date that the last permit or other authorization was issued from any other governmental agency;
    - iii. Nine months from the date of the last resolution of any litigation concerning any such permits or authorization; or
  - b. A program of construction/installation is discontinued for a period of 18 months or more, or is not completed within a reasonable time, except for a DEQ approved period between phases of a phased construction project.
- (9 VAC 5-80-1210)



26. **Right of Entry** - The permittee shall allow authorized local, state, and federal representatives, upon the presentation of credentials:
- To enter upon the permittee's premises on which the facility is located or in which any records are required to be kept under the terms and conditions of this permit;
  - To have access to and copy at reasonable times any records required to be kept under the terms and conditions of this permit or the State Air Pollution Control Board Regulations;
  - To inspect at reasonable times any facility, equipment, or process subject to the terms and conditions of this permit or the State Air Pollution Control Board Regulations; and
  - To sample or test at reasonable times.
- For purposes of this condition, the time for inspection shall be deemed reasonable during regular business hours or whenever the facility is in operation. Nothing contained herein shall make an inspection time unreasonable during an emergency.  
(9 VAC 5-170-130)
27. **Notification for Facility or Control Equipment Malfunction** - The permittee shall furnish notification to the Director, Tidewater Regional Office, by facsimile transmission, telephone or telegraph, of malfunctions of the affected facility or related air pollution control equipment that may cause excess emissions for more than one hour. Such notification shall be made as soon as practicable but not later than four daytime business hours after the malfunction is discovered. The permittee shall provide a written statement, within two weeks of discovery of the malfunction, giving all pertinent facts, including the estimated duration of the breakdown. When the condition causing the failure or malfunction has been corrected and the equipment is again in operation, the permittee shall notify the Director, Tidewater Regional Office in writing.  
(9 VAC 5-20-180 C)
28. **Violation of Ambient Air Quality Standard** - The permittee shall, upon request of the DEQ, reduce the level of operation or shut down a facility, as necessary to avoid violating any primary ambient air quality standard and shall not return to normal operation until such time as the ambient air quality standard will not be violated.  
(9 VAC 5-20-180 I)
29. **Maintenance/Operating Procedures** - The permittee shall take the following measures in order to minimize the duration and frequency of excess emissions, with respect to air pollution control equipment and process equipment which affect such emissions:
- Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance.
  - Maintain an inventory of spare parts.
  - Have available written operating procedures for equipment. These procedures shall be based on the manufacturer's recommendations, at a minimum.
  - Train operators in the proper operation of all such equipment and familiarize the operators with the written operating procedures. The permittee shall maintain records of the training provided including the names of trainees, the date of training and the nature of the training.

Records of maintenance and training shall be maintained on site for a period of five years and shall be made available to DEQ personnel upon request.  
(9 VAC 5-50-20 E)

30. **Permit Suspension/Revocation** - This permit may be suspended or revoked if the permittee:
- Knowingly makes material misstatements in the application for this permit or any amendments to it;
  - Fails to comply with the conditions of this permit;
  - Fails to comply with any emission standards applicable to the equipment listed in Condition 2;
  - Causes emissions from this facility which result in violations of, or interferes with the attainment and maintenance of, any ambient air quality standard;
  - Fails to operate this facility in conformance with any applicable control strategy, including any emission standards or emission limitations, in the State Implementation Plan in effect on the date that the application for this permit is submitted;
  - Fails to amend or operate this facility in accordance with the application for this permit or any amendments to it; or
  - Allows the permit to become invalid.
- (9 VAC 5-80-1210)
31. **Change of Ownership** - In the case of a transfer of ownership of a stationary source, the new owner shall abide by any current permit issued to the previous owner. The new owner shall notify the Director, Tidewater Regional Office of the change of ownership within 30 days of the transfer.  
(9 VAC 5-80-1240)
32. **Registration/Update** - Annual requirements to fulfill legal obligations to maintain current stationary source emissions data will necessitate a prompt response by the permittee to requests by the DEQ or the Board for information to include, as appropriate: process and production data; changes in control equipment; and operating schedules. Such requests for information from the DEQ will either be in writing or by personal contact. The availability of information submitted to the DEQ or the Board will be governed by applicable provisions of the Freedom of Information Act, §§ 2.1-340 through 2.1-348 of the Code of Virginia, § 10.1-1314 (addressing information provided to the Board) of the Code of Virginia, and 9 VAC 5-170-60 of the State Air Pollution Control Board Regulations. Information provided to federal officials is subject to appropriate federal law and regulations governing confidentiality of such information.  
(9 VAC 5-170-60 and 9 VAC 5-20-160)
33. **Permit Copy** - The permittee shall keep a copy of this permit on the premises of the facility to which it applies.  
(9 VAC 5-170-160)